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AMSAT NEWS SERVICE
ANS-022

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-022 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 022.01
>From AMSAT HQ KENSINGTON, MD.
January 22, 2017
To All RADIO AMATEURS
BID: $ANS-022.01

Reno, Nevada to Host 2017 AMSAT Space Symposium Oct 27-29

AMSAT NA announces that the 2017 AMSAT Space Symposium will be held on Friday through Sunday, Oct 27, 28, 29, 2017 in Reno, Nevada.

Location will be at the Silver Legacy Resort , 407 N Virginia Street, in Downtown, Reno.

The Silver Legacy is a 4 star Resort/Hotel/Casino which is an iconic 42-story hotel with its massive round dome and spires centered in downtown. The Silver Legacy is typically lit green at night and is referred to by many as the "Emerald City" of Reno. In support of the University of Nevada Wolf Pack, the Silver Legacy will sometimes turn blue.

Some of the perks include
* Free parking for attendees.

* Free transportation to and from the airport (10 minutes shuttle ride).
* Complimentary WiFi.
* The Silver Legacy has 8 restaurants and 8 different retail shops.
* Large selection of additional restaurants and casinos (El Dorado, Circus Circus, and the rest of downtown Reno) are in close proximity and within walking distance.
* Multiple alternate activities and attractions are in the Reno area.
  Nevada Museum Of Modern Art
  National Automobile Museum
  Fleischmann Planetarium (UNR Campus)
  National Bowling Stadium
* If you are staying longer in the Reno area, there are several other points of interest close by, including Virginia City and Lake Tahoe.

2017 AMSAT Space Symposium and Annual Meeting

The annual AMSAT Space Symposium features:
* Space Symposium with Amateur Satellite Presentations
* Operating Techniques, News, & Plans from the Amateur Satellite World
* Board of Directors Meeting open to AMSAT members
* Opportunities to Meet Board Members and Officers
* AMSAT-NA Annual General Membership Meeting
* Auction, Annual Banquet, Keynote Speaker and Door Prizes !!

Several members from The Sierra Nevada Amateur Radio Society (SNARS) as well as many other local radio amateurs will be participating in helping with this event.

Additional information about the 2017 AMSAT Symposium will be posted on the AMSAT web site,
www.amsat.org
as it becomes available.

[ANS thanks Joe Spier, K6WAO, Frank Kostelac, N7ZEV, Linda Kostelac, KC7IIT, and the AMSAT-NA Office for the above information]

Diwata 2's payload includes amateur radio

THE whole world is again set to witness come 2018 a third-world country launching into space another microsatellite -- this time with an amateur or ham radio included in the payload.

An amateur radio is a communication technology that allows its operators to talk or send messages to other people, especially first responders, planners and government agencies whose own communications have been knocked out, in time of disasters and emergencies.

Diwata 2 -- the Philippines' second microsatellite that is currently being developed by the Department of Science and Technology (DOST), the University of the Philippines (UP) Diliman, Hokkaido University, and Tohoku University in Japan -- has this technology, along with a telescope and cameras.

Its predecessor, the Diwata 1, was launched into orbit last April 2016 and has been sending pictures to DOST-Advanced Science and Technology Institute (Asti); the latest photo posted on PHL-Microsat Program's website shows the swollen Pinacanauan River, as well as

agricultural areas damaged by flood after Tropical Cyclone Lawin (Haima) made landfall in Peñablanca, Cagayan on October 19, 2016.

The PHL-Microsat said that as of January 13, the "Diwata 1 has circled the world approximately 4,083 times, taking images not just of the Philippines but also of other parts of the Earth."

"We will download the images every time the Diwata 1 passes by the Philippines," said Dr. Joel Joseph Marciano Jr., program leader of PHL-Microsat and acting director of DOST-Asti, in an interview with SunStar.

As to the amateur radio included in the payload of Diwata 2, Marciano said it is a very important feature of the second microsatellite, especially that the country is prone to natural disasters and calamities.

"So when the satellite passes over in time of disaster, you can get a ham radio and send messages to another person in other areas in the country, and even give updates on evacuation using ham radio," he told fellows of the 20th Lopez Jaena Community Journalism Workshop held in UP Diliman last November 2016.

The Philippines has more than a thousand amateur radio operators nationwide. Most of them are members of the Philippine Amateur Radio Association.

Aside from the amateur radio, Diwata 2 has a Spaceborne Multispectral Imager (SMI) with liquid crystal tunable filter (LCTF) for environmental monitoring; high precision telescope (HPT) for rapid post-disaster assessment; and enhanced resolution cameras (instead of wide and middle field cameras used in Diwata 1).

"Medium and wide cameras will be replaced by enhanced resolution cameras but there will still be the HPT and SMI with LCTF... Three cameras, plus an amateur radio as part of the payload," Marciano told SunStar.

He said 11 Filipino scholars are working on the Diwata 2.

"Mas dumami pa, because we now have 11 scholars. They are in Japan, working with the two universities (Hokkaido and Tohoku)," said Marciano.

There were only nine Filipino scholars who assembled the Diwata 1.

"They are considered as scholars because they are under the DOST scholarships, and building the microsatellites is part of their studies," added Marciano.

He said that at present, they are working on the engineering model. "We are now in the design phase. We are working on the blocks. They are being done here locally and they will be tested in Japan."

The DOST targets to launch the Diwata 2 in the first half of 2018, but Marciano said the launching will also depend on the availability of the launching facility.

"The target overall for the completion of the flight model is in December 2017," he said.

Except for the amateur radio and enhanced resolution cameras, Diwata 2 will hover 400 kilometers above the Earth's surface just like Diwata 1. It also weighs 50 kilograms, the size of a room air

conditioner.

"The characteristics are the same. There will be chances na mag-abot sila doon, which is an advantage to us since it will mean that we can generate more images from them... The idea is they should be operated on the same constellation. They have to communicate with other satellites to provide us better images," said Marciano.

He explained that the country's microsatellites are not geostationary satellites, which have an altitude of 39,000 kilometers and are more expensive.

"Diwata 2 only has 400 to 600 kilometers altitude," he said, adding that because it is a microsatellite, it is only considered a secondary payload.

"Parang nakikiangkas lang tayo sa paglaunch (We are just hitching a ride), because it is very expensive to launch big satellites. You have to pay for the rocket," he told the Lopez Jaena journalism workshop fellows.

He also said in November that the challenge of Diwata satellites' orbit is they can only take images of a certain location if they passes by it.

"Diwata 1 passes every day, but it passes in different places, so there's a challenge of being in the right place at the right time," said Marciano.

Asked about the possibility of a launching failure, Dr. Marc Caesar Talampas, project leader in-charge of the microsatellite BUS development, said in a follow-up interview: "They undergo rigorous testing before they will be launched into space. There is vibration test, radiation testing, etc. We have to comply with all the specifications."

"The failure is more on not responding, not on the launching. But so far, based on our experience with Diwata 1, the communication has been positive," added Marciano.

The government has allotted P2 billion per year for DOST's space technology program. This is on top of the P840 million that was already invested for the PHL-Microsat program.

"There's an increase in the availability of funding for research in space technology... In 2018, we will come up with a new (budget) proposal,"Marciano said.

[ANS thanks LAUREEN MONDOÑEDO-YNOT and SunStar Philippines for the above information.]

AMSAT News From South Africa

** Turn your laptop into a 24 MHz to 1,7 GHz receiver. AMSAT SA is holding a half-day SDR Workshop in association with the South African Radio League at the NARC on 18 February 2017. This is a hands-on workshop where participants will install a VHF/UHF RTL dongle and programme it to become a VHF/UHF receiver covering 24 MHz to 1,7 GHz. Anton Janovsky, ZR6AIC, and Cor Rademeyer, ZS6CR, will present the Workshop. The Workshop fee includes the RTL dongle and a memory stick

with all the required software as well as light refreshments. Register before 11 February 2017, all the details and registration form are available on www.amsatsa.org.za. Book early to avoid disappointment.

** The 2017 AMSAT SA Space Conference will be held on Saturday 20 May 2017 in Pretoria. This is the first call for paper proposals. The theme of the conference is "Conquering Space as an educational pastime." Proposals for papers should include a brief synopsis of the proposed paper. The closing date for proposals is 31 January 2017. Authors will be notified of acceptance of their paper by 15 February 2017. More details on www.amsatsa.org.za

[ANS thanks the SARL weekly news in English 2017-1-7 for the above information]

JAMSAT Symposium in Kyoto on 11-12 March, Presenters Requested.

Mikio Mouri, JA3GEP, JAMSAT announces "We are going to held our AGM and JAMSAT Symposium in Kyoto next March.

"I hope to have some attendance from AMSAT-NA, even via Skype. We hope to hear some update of activities in US."

The meeting will be held at: http://hotel-binario.jp/en/ The Hotel Binario Saga Arashiyama is located in the beautiful Arashiyama district of Kyoto and is perfect for sightseeing.

Date and Time of Symposium:
14:30-17:30JST(05:30-08:30UTC) March 11(Sat)
09:00-13:00JST(00:00-04:00UTC) March 12(Sun)

If anyone has an opportunity to join and present, please let Mikio know the appropriate time of your availability. He will keep the time slot for your presentation.

Mikio can be contacted via JBH02173 (at) nifty.com]

[ANS thanks Mikio JA3GEP for the above information.]

Kenwood features ARISS in February 2017 Two Page QST Ad

Kenwwood features ARISS donations in its two page ad in the February 2017 QST. Check out the ad on pages 27 and 28.

During February the ARRL is running a special slider in their rotating banner, on their website home page, with an appeal for ARISS donations.

Also, The QST Cover story for February teases "Texas Students Take Amateur Radio to the Edge of Space"

The article "To the Edge of Space and Back with Ham Radio" by Chase Mertz, KG5KKX is featured on page 76.

Mertz highlights "Student engineers in the Eldorado Space Program design, build, and program instrument packages, sending them as high as 120,000 feet using a highaltitude weather balloon."

[ANS thanks ARRL for the above information]

AMSAT Phase 4 Weekly Engineering Report

AMSAT Phase 4 Ground Radio prototype with Ettus Research B210 by John Petrich W7FU can be viewed at: https://m.youtube.com/watch?v=oyAe21bWR4g&feature=youtu.be

[ANS thanks Michelle W5NYV for the above information.]

US Naval Academy HFsat Receives IARU Frequency Coordination

The US Naval Academy has received IARU satellite frequency coordination for HFsat, a 1.5 U CubeSat with a 15 meter to 10 meter linear transponder with 30kHz bandwidth. The CubeSat will also carry an APRS digipeater on 145.825MHz.

HFsat is a project to demonstrate the viability of HF satellite communications as a backup communications system using existing ubiquitous HF radios that are usually a part of the communications suite on all small mobile platforms such has ham radio mobiles and portable operations frequently used by Amateurs in support of disaster and emergency response communications. The HFsat will be gravity gradient stabilized by its long full size 10 meter band halfwave HF dipole antenna with tip masses.

A standardized CubSsat VHF communications card based on the popular Byonics MTT4B all-in-one APRS Tiny-Track4 module for telemetry, command and control is under development at the US Naval Academy. Standardizing the communications board makes it easy to add the HF Transponder mission into Naval Academy’s standard CubeSat bus without an all new start. HFsat will continue the long tradition of small amateur satellites designed by Aerospace students at the US naval Academy. The students are working with Bill Ress, N6GHZ on the HF transponder card.

HF Uplink: 21.40 MHz, 30 kHz wide multi user bandwidth
HF downlink: 29.42 MHz, the 30 kHz wide downlink passband
VHF APRS DigiPeater: 145.825 MHz FM 1200 baud AFSK packet

Find additional information on-line at:

http://aprs.org/HFsat.html (US Naval Academy)

http://www.amsat.org.uk/iaru/ (search for HFsat in the list of satellites that have been coordinated)

[ANS thanks the US Naval Academy and the IARU for the above information]

ARISS News

+ A Successful contact was made between High School "Léon Blum", Le
  Creusot, France and Astronaut Thomas Pesquet KG5FYG using Callsign
  NA1SS. The contact began Mon 2017-01-16 11:53:17 and lasted about
  nine and a half minutes. Contact was Telebridge via K6DUE.
  ARISS Mentor was Joseph F6ICS.

Upcoming ARISS Contact Schedule as of 2017-01-19 06:30 UTC

Quick list of scheduled contacts and events:

South Street School, Danbury CT, telebridge via VK4KHZ. The ISS
callsign is presently scheduled to be NA1SS. The scheduled astronaut
is Shane Kimbrough KE5HOD. Contact is a go for:
Fri 2017-01-27 19:50:18 UTC

Swiss Space Center – EPFL, Lausanne, Switzerland, telebridge via
W6SRJ. The ISS callsign is presently scheduled to be NA1SS. The
scheduled astronaut is Thomas Pesquet KG5FYG. Contact is a go for:
Thu 2017-01-26 11:06:29 UTC

ARISS is always glad to receive listener reports for the above
contacts. ARISS thanks everyone in advance for their assistance.
Feel free to send your reports to aj9n(a)amsat.org or aj9n(a)aol.com.

Listen for the ISS on the downlink of 145.800 MHz.

The following US states and entities have never had an ARISS contact:
Arkansas, Delaware, South Dakota, Wyoming, American Samoa, Guam,
Northern Marianas Islands, and the Virgin Islands.

QSL information may be found at:
http://www.ariss.org/qsl-cards.html

ISS callsigns: DPØISS, IRØISS, NA1SS, OR4ISS, RSØISS

Check out the Zoho reports of the ARISS contacts
https://reports.zoho.com/ZDBDataSheetView.cc?DBID=412218000000020415

Exp. 49 on orbit
Shane Kimbrough KE5HOD
Andrei Borisenko
Sergey Ryzhikov

Exp. 50 on orbit
Peggy Whitson
Thomas Pesquet KG5FYG
Oleg Novitskiy

[ANS thanks ARISS, Charlie AJ9N and David AA4KN for the above
 information]

Satellite Shorts From All Over

+ APRS Symbol Look Up Table

  Kenneth Finnegan, W6KWF has created an easy to use lookup table for

APRS symbol codes.

"I've made a lookup table which has the symbol code, the primary symbol, and the secondary symbol all on top of each other as opposed to the three adjacent tables on the aprs.org page: http://tinyurl.com/ANS-022-APRS-Table

[ANS thanks Kenneth K6KWF for the above information.]

+ Colloquium Videos for 2009-2012 Posted on YouTube

AMSAT-UK reports that thanks to Wouter Weggelaar PA3WEG and @BATC online videos of talks given at AMSAT-UK Colloquium 2009-2012 are now posted at: https://www.youtube.com/user/AMSATUK/videos

[ANS thanks AMSAT-UK for the above information]

+ June Page of the 2017 ARRL Calendar Features NPOTA Satellite Ops

"Fernando Ramirez-Ferrer NP4JV, overlooks the vastness of Grand Canyon National Park (NP22) in Arizona as he makes contacts via the SO-50 Amateur Radio satellite. This was the sixth NPOTA unit he had activated via satellite." (Ruth V Ramirez, photo credit)

[ANS thanks ARRL for the above information.]

+ UT1FG/MM is departing Finland ~1900 UTC (21 January) heading to Mexico.

Clean your antennas, de-wax your ears and remember to give others a chance to get through..

[ANS thanks Jari OH2FQV, Via Twitter, for the above information.]

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
EMike McCardel, AA8EM
aa8em at amsat dot org